ENERGY STAR® Program Requirements for Room Air Cleaners

Partner Commitments
DRAFT 2

Commitment

The following are the terms of the ENERGY STAR Partnership Agreement as it pertains to the manufacturing of ENERGY STAR qualified room air cleaners. The ENERGY STAR Partner must adhere to the following program requirements:

- comply with current ENERGY STAR Eligibility Criteria, defining the performance criteria that must be met for use of the ENERGY STAR certification mark on room air cleaners and specifying the testing criteria for room air cleaners. EPA may, at its discretion, conduct tests on products that are referred to as ENERGY STAR qualified. These products may be obtained on the open market, or voluntarily supplied by Partner at EPA's request;

> **Note:** ENERGY STAR is a voluntary program that allows manufacturers to self-certify qualified models. EPA relies on the integrity of the manufacturing partners when accepting product performance data for ENERGY STAR qualification. Once a model qualifies as ENERGY STAR, the partner is not required to retest or re-qualify it unless: (1) the ENERGY STAR specification is revised or (2) engineering design changes have been made to the model that could affect energy performance. In the case of a specification revision, manufacturers will be given sufficient lead time to redesign, test, and resubmit those models that no longer qualify as ENERGY STAR under the new requirements.
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> In response to stakeholder concerns regarding product performance verification, testing efforts are currently in place to evaluate the performance of ENERGY STAR qualified products in the marketplace. At its discretion, EPA may randomly select an ENERGY STAR qualified product, or follow-up on claims regarding a specific model in question, and conduct laboratory testing for verification that it meets the current specification requirements. If the product fails the test, EPA will inform the manufacturer, and undertake appropriate actions necessary to address the non-compliance. EPA has undertaken such efforts to maintain the credibility and integrity of the ENERGY STAR brand in the marketplace.

- comply with current ENERGY STAR Identity Guidelines, describing how the ENERGY STAR labels and name may be used. Partner is responsible for adhering to these guidelines and for ensuring that its authorized representatives, such as advertising agencies, dealers, and distributors, are also in compliance;

- agree not to use quotes or statements related to indoor air quality that misrepresent the views of the EPA Indoor Environments Division in public documents or on the company Web site;

Note: It appears that some air cleaner manufacturers have taken statements made by EPA's Indoor Environments Division as an implicit endorsement of the need for room air cleaners to address indoor air quality concerns. EPA's Indoor Environments Division neither supports nor rejects the performance of these products. Instead, efforts are made through outreach materials and the EPA Web site to educate consumers on the facts surrounding air cleaner performance. Consumer perception of those products that bear the ENERGY STAR mark is important to EPA. This specification proposes an air cleaning performance-to-energy ratio for purposes of comparing air cleaner models; the ENERGY STAR mark should not be used to promote an air cleaner's ability to alleviate indoor air quality concerns. EPA expects its ENERGY STAR manufacturing partners to respect its efforts to provide careful, accurate information about the indoor environment and to refrain from taking any of its statements out of context or applying them generally in the implicit or explicit support of health claims. To address EPA's concerns, an additional partner commitment was added above, requiring partners to refrain from using quotes from the EPA Indoor Environments Division regarding air cleaner performance and the improvement of indoor air quality.

- qualify at least one room air cleaner model as ENERGY STAR within one year of activating the room air cleaner portion of the agreement. When Partner qualifies the product, it must meet the specification (e.g., Tier 1 or 2) in effect at that time;

- provide clear and consistent labeling of ENERGY STAR qualified room air cleaners. The ENERGY STAR must be clearly displayed on the top/front of the product, on product packaging, in product literature (i.e., user manuals, spec sheets, etc.), and on the manufacturer's Internet site where information about ENERGY STAR qualified models is displayed;

Note: The ENERGY STAR mark is well known by consumers as the symbol for energy efficiency. The ENERGY STAR label should be placed in an area of high visibility so that the consumer can see that by purchasing and using an ENERGY STAR qualified air cleaner, they are helping to reduce air pollution and greenhouse gases through energy efficiency. To date, EPA has not received any stakeholder comments regarding the placement of the ENERGY STAR mark on the top/front of the product. EPA intends to move forward with this requirement in the final specification.

- provide to EPA, on an annual basis, an updated list of ENERGY STAR qualifying room air cleaners. Once the Partner submits its first list of ENERGY STAR qualified room air cleaner models, the Partner will be listed as an ENERGY STAR Partner. Partner must provide annual updates in order to remain on the list of participating product manufacturers;

- provide to EPA, on an annual basis, unit shipment data or other market indicators to assist in determining the market penetration of ENERGY STAR. Specifically, Partner must submit the total number of ENERGY STAR qualified room air cleaners shipped (in units by model) or an equivalent measurement as agreed to in advance by EPA and Partner. Partner is also encouraged to provide ENERGY STAR qualified unit shipment data segmented by meaningful product characteristics (e.g., capacity, size, speed, or other as relevant), total unit shipments for each model in its product line, and percent of total unit shipments that qualify as ENERGY STAR. The data for each calendar year should be submitted to EPA, preferably in electronic format, no later than the following March and may be provided directly from the Partner or through a third party. The data will be used by EPA only for program evaluation purposes and will be closely controlled. If requested under the Freedom of Information Act (FOIA), EPA will argue that the data is exempt. Any information used will be masked by EPA so as to protect the confidentiality of the Partner;

Note: Unit shipment data is used by EPA to measure program success and determine energy savings attributed to the purchase and use of ENERGY STAR qualified products through market penetration analysis. However, there continues to be some concern with the collection of annual shipment data and ensuring the confidentiality of this data. As part of the ENERGY STAR partnership agreement, EPA is requesting unit shipment data from all manufacturing partners in the ENERGY STAR program; some of which share the same concerns regarding confidentiality. In each case, EPA has worked closely with the manufacturers and/or third-party organization to determine the best format in which to present this data so that manufacturer sources are not revealed. To further help ensure the confidentiality of this data, EPA enlists the assistance of an outside source (i.e., contractor) to collect and house the data.

Furthermore, third-party organizations, such as Association of Home Appliance Manufacturers (AHAM), may collect the data from individual partners and provide to EPA an aggregated number or percentage of qualified products. EPA is also open to other market indicators to assist in determining the actual market penetration of ENERGY STAR qualified products. EPA is not requiring any manufacturer or third party organization to provide copies of actual industry reports and will work with air cleaner manufacturers and AHAM to determine the best way to collect this information while protecting the confidentiality of the data source.

- notify EPA of a change in the designated responsible party or contacts for room air cleaners within 30 days.

Performance for Special Distinction

In order to receive additional recognition and/or support from EPA for its efforts within the Partnership, the ENERGY STAR Partner may consider the following voluntary measures and should keep EPA informed on the progress of these efforts:

- consider energy efficiency improvements in company facilities and pursue the ENERGY STAR for buildings;

- purchase ENERGY STAR qualified products. Revise the company purchasing or procurement specifications to include ENERGY STAR. Provide procurement officials' contact information to EPA for periodic updates and coordination. Circulate general ENERGY STAR qualified product information to employees for use when purchasing products for their homes;

- ensure the power management feature is enabled on all ENERGY STAR qualified monitors in use in company facilities, particularly upon installation and after service is performed;

- provide general information about the ENERGY STAR program to employees whose jobs are relevant to the development, marketing, sales, and service of current ENERGY STAR qualified product models;

- feature the ENERGY STAR on Partner Web site and in other promotional materials. If information concerning ENERGY STAR is provided on the Partner Web site as specified by the ENERGY STAR Web Linking Policy (this document can be found in the Partner Resources section on the ENERGY STAR Web site at www.energystar.gov), EPA may provide links where appropriate to the Partner Web site;

- provide a simple plan to EPA outlining specific measures Partner plans to undertake beyond the program requirements listed above. By doing so, EPA may be able to coordinate, communicate, and/or promote Partner's activities, provide an EPA representative, or include news about the event in the ENERGY STAR newsletter, on the ENERGY STAR Web pages, etc. The plan may be as simple as providing a list of planned activities or planned milestones that Partner would like EPA to be aware of. For example, activities may include: (1) increase the availability of ENERGY

STAR qualified products by converting the entire product line within two years to meet ENERGY STAR guidelines; (2) demonstrate the economic and environmental benefits of energy efficiency through special in-store displays twice a year; (3) provide information to users (via the Web site and user's manual) about energy-saving features and operating characteristics of ENERGY STAR qualified products, and (4) build awareness of the ENERGY STAR Partnership and brand identity by collaborating with EPA on one print advertorial and one live press event;

- provide quarterly, written updates to EPA as to the efforts undertaken by Partner to increase availability of ENERGY STAR qualified products, and to promote awareness of ENERGY STAR and its message.

ENERGY STAR® Program Requirements for Room Air Cleaners

Eligibility Criteria
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Below is the **Draft 2** product specification (Version 1.0) for ENERGY STAR qualified room air cleaners. A product must meet all of the identified criteria if it is to earn the ENERGY STAR.

1) **Definitions:** Below is a brief description of a room air cleaner and other terms as relevant to ENERGY STAR.

   A. Room Air Cleaner: An electric cord-connected, portable appliance with the primary function of removing particulate matter from the air and which can be moved from room to room.

> **Note:** EPA received a number of requests to remove the term "cord-connected" from the room air cleaner definition provided above. This term was added to the previous Draft 1 document to be consistent with the definition that is provided in the latest ANSI/AHAM AC-1 test standard, which is referenced in Sections 3 and 4 of this specification. Furthermore, the scope of AC-1, provided in Section 2 of the test standard, states "This standard method applies to portable household electric *cord-connected* air cleaners as defined in Section 3 [Definitions]." Since this specification relies heavily on the methods provided in AC-1, the term "cord-connected" will remain as part of the definition for room air cleaner, above. EPA continues to be interested in those air cleaner models that use alternative means for electricity, and depending on manufacturer interest and available performance data, EPA may consider these product types during future specification revisions. If language provided in AC-1 regarding the definition of a room air cleaner changes, EPA will consider adopting the new definition after careful review of these product types.
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> The previous Draft 1 document included a definition for airflow that included the following requirement: "..the CFM value must be tied directly to a Clean Air Delivery Rate (CADR) and measured in accordance with ANSI/AHAM AC-1." EPA's intention was to specify a unit of measurement internal to ANSI/AHAM AC-1 when the net rate of decay is multiplied by the volume of the test chamber. However, it has been brought to EPA's attention by several industry members that airflow (CFM) cannot be tied directly to CADR and therefore, references to CFM do not belong in the specification. To be consistent with AC-1 and avoid further confusion, the definition for airflow has been deleted.

   1. Fan with Filter: Air cleaner that operates with an electrical source of power and contains a motor and fan for drawing air through a filter(s).

   2. Fan with Filter and Electrostatic Plates: Air cleaner which operates with a fan and filter(s) that incorporates electrically charged plates or wires to electrostatically collect particulate matter.

   3. Fan Filter with Ion Generator: Air cleaner that incorporates an ion generator in addition to a fan and filter.

   4. Ion generator: Air cleaner that incorporates an ion generator only.

   5. Hybrid: An air cleaner embodying more than one distinctive cleaning modality.

   6. Combination Product: An air cleaner that includes a secondary function, other than air cleaning technology, within the same housing such as a humidifier or dehumidifier.

   7. Ozone generator: A device intended to reduce or eliminate microorganisms within a chamber

by means of introducing ozone into the room environment.

8. Other types: Devices that have the stated capability to reduce the concentration of particulate matter in a room.

Note: EPA received a number of requests to adopt the definitions provided in AC-1 for purposes of defining relevant terms used in this specification. Definitions provided above for the various types of air cleaners have been taken from Sections 3.1 and 3.2 of AC-1. The terms "hybrid", "combination product", and "ozone generator", and their definitions, continue to be included in this specification for purposes of clarification and understanding of what types of products may qualify under this specification. Definitions for filter media were originally included in the Draft 1 document for informational purposes; however, these terms are not specifically referenced in this specification and therefore, have been deleted.

B. AHAM: Association of Home Appliance Manufacturers.

C. ANSI/AHAM AC-1-2002: A test protocol for measuring the performance of portable household electric cord-connected room air cleaners. AC-1 measures the clean air produced by a room air cleaner as that clean air is defined within the standard. This public standard was developed under the auspices of AHAM and is recognized by ANSI. Throughout this specification, ANSI/AHAM AC-1-2002 will be referred to as AC-1.

D. Clean Air Delivery Rate (CADR): Within the parameters of AC-1, the measure of the delivery of specified, particulate-free air produced by a household electric, cord-connected room air cleaner. More technically, CADR represents the rate of particulate contaminant reduction in the test chamber when the unit is turned on, minus the rate of natural decay when the unit is not running, times the volume of the test chamber as measured in cubic feet [**(RCR – RND) * V**]. Each type of particulate contaminant receives a test value, which includes: CADR for Dust; CADR for Tobacco Smoke; and CADR for Pollen. **Note:** CADR always measures a unit's performance as a complete system and has no linear relationship to the air movement per se or to the characteristics of any particular filter medium.

Note: It is EPA's understanding that the test procedure provided in AC-1 only measures the reduction of *particulate* matter suspended in the air of the test chamber; it does not measure the reduction of other gaseous contaminants. To be consistent with the scope of the AC-1 test procedure and for further clarification, the term "particulate" has been added to the CADR definition above.

E. Standby Mode: The lowest power consumption mode which cannot be switched off (influenced) by the user and that may persist for an indefinite time when an air cleaner unit is connected to the main electricity supply and used in accordance with the manufacturer's instructions. For purposes of this specification, this is also defined as the mode at which energy is consumed by the air cleaner to support only the secondary consumer features such as: clocks, remote controls, and other programmable functions while the primary function is inactive.

I. Standby Power: The average power in standby mode, measured in watts.

J. True RMS: RMS, or Root Mean Square, refers to the most common mathematical method of defining the effective voltage or current of an AC (alternating current) wave. RMS value is the effective voltage of an AC power source, equivalent to DC (direct current) voltage that would produce the same power dissipation as heat assuming a pure resistance.

K. UL: Underwriters Laboratories.

Note: Definitions are now provided for Standby Mode, Standby Power, and True RMS; these terms are referenced in Sections 3 and 4, below. The definitions for Standby Mode and Standby Power are based on the latest Draft of the International Electrotechnical Commission (IEC) document "IEC Standard 62301, Ed. 1.0: Household Electrical Appliances – Measurement of Standby Power". More information regarding standby power requirements is provided in Section 3.c, below.

2) Qualifying Products: In order to qualify as ENERGY STAR, a room air cleaner must be covered by one of the definitions in Section 1A and meet the specification requirements provided in Section 3, below. Combination products and ozone generators, as defined in Sections 1A.6 and 7, *cannot* qualify under this specification at this time.

Note: Several manufacturers indicated in their comments that some air cleaner models without a fan, but capable of effectively pulling contaminants into the units should be considered under this specification. Based on supporting data from manufacturers that includes valid performance test data under AC-1, EPA is allowing these air cleaners to qualify under this specification as long as they meet the minimum CADR and CADR/watt requirements provided in Section 3, below. This change is based on improvements in fan-less technology and the fact that such products are not excluded from AC-1 testing.

When developing ENERGY STAR specifications, EPA must consider both the energy efficiency of the product as well as safety to the consumer. Products that produce ozone as a primary means to remove air borne particles, or ozone generators as defined in Section 1.A.7, are excluded from this specification. However, those air cleaner models that emit small amounts of ozone as a byproduct will be allowed to participate provided they meet the requirements of UL Standard 867 ($\leq$ 50 ppb) for ozone emission and the minimum requirements set forth in Sections 3 and 4 of this specification.

Combination air cleaner models continue to be excluded from this specification. EPA continues to believe that the energy consumption of both the primary and secondary functions must be accounted for when considering the total energy consumption and efficiency of the model. It is important that the consumer is assured quality performance and energy efficiency of both operating functions when labeled by the manufacturer as ENERGY STAR. To date, EPA has limited data on the performance of these product types and does not intend to delay this specification development process to conduct the additional research needed to determine whether these models should be addressed. Depending on available data and interest from manufacturers, EPA may consider combination products during future revisions of this specification.

3) Energy-Efficiency Specification for Qualifying Products: To determine if a model qualifies, its CADR must be measured according to the latest ANSI/AHAM AC-1 test procedure. For purposes of this specification, CADR for Dust must be used when determining the energy efficiency (CADR/watt) of the room air cleaner. **Qualifying air cleaner models must produce a minimum 50 CADR for Dust to be considered under this specification**. Only those air cleaner models covered in Section 2 that meet the following criteria may qualify as ENERGY STAR:

   a) **Room air cleaner minimum performance requirement:** ≥ 2.0 CADR/watt (Dust)

   Note: Once a representative model has qualified as ENERGY STAR, all additional units manufactured under the same model name/number, and found in the distribution channel (i.e., retail), must perform within 3 percent of the tested performance levels submitted to EPA and listed on the ENERGY STAR Web site.

Note: EPA received a suggestion to use straight minimum energy usage requirements (watts) as opposed to a CADR/watt ratio for measuring air cleaner's energy efficiency. One of EPA's guiding principles when developing a new specification is that product performance is maintained or enhanced with increased energy efficiency. In developing this specification, it is important to EPA to ensure the air cleaner's primary function of cleaning indoor air is not compromised for lower energy consumption. CADR ratings are tested and verified under the AC-1 standard as a measure of air cleaning performance. EPA continues to believe that the CADR/watt ratio proposed in this specification achieves its goal of ensuring that product performance is not sacrificed for energy efficiency.

There is concern from a number of stakeholders regarding EPA's use of tobacco smoke as the basis of measuring air cleaner performance. It is EPA's understanding that AC-1 does not measure the reduction of the gaseous contaminants commonly found in tobacco smoke. Due to the complexity of measuring effective tobacco smoke removal, EPA has decided to use dust as the proxy for testing and reporting air cleaning performance (Dust CADR/watt) under this specification. Based on the product performance data provided to EPA for review, air cleaner models produce similar CADR values for both tobacco smoke and dust. Using the CADR value for dust will help ensure that the air cleaner is effectively removing particulate matter in the air without needing to address the removal of gaseous pollutants.

EPA has received a number of different comments regarding the proposed 2.0 CADR/watt requirement; some manufacturers think that the level is too lenient while others think that it is too stringent. Since energy consumption data for air cleaners is not released for public review, EPA must rely on manufacturer or other industry resources to provide this data. Over the last year EPA has requested performance data from stakeholders and a number of manufacturers responded with information on their respective air cleaner models. The performance level proposed in this specification is based on an analysis of these submittals. Unless EPA receives additional energy consumption data from those manufacturers who disagree with the 2.0 CADR/watt value, EPA plans to move forward with a 2.0 CADR/watt minimum performance requirement in the final specification.

In response to manufacturer requests, the tolerance has been increased from 1% to 3% to compensate for individual tolerances in test instrumentation and slight variations in manufacturing between different factories. This tolerance does not apply to initial ENERGY STAR testing and qualification; each representative air cleaner model must meet the 2.0 CADR/watt minimum requirement when initially tested for energy performance. However, in the case that an air cleaner model is purchased and tested by EPA or another industry stakeholder, the resulting CADR/watt performance may be within -3% of what was initially reported to EPA and still be compliant with the specification. For example, Model A qualifies as ENERGY STAR with a 2.5 CADR/watt; this number is then listed on the ENERGY STAR Web site and represents all models identical to Model A and sold in the distribution channel. Each Model A found in the distribution channel must test to 2.425 CADR/watt (3% tolerance) for that representative model to continue to qualify as ENERGY STAR.

b) **UL Safety Requirements:** For models that emit ozone as a byproduct of air cleaning, the ozone production by the room air cleaner must not exceed 50 ppb in accordance with the UL Standard 867.

Note: To address concerns brought to EPA about the potential health risks associated with ozone generation, manufacturers are now required to provide proof that their qualifying models meet UL Safety Standard 867.

c) **Standby Power:** ≤ 2 watt(s) while in standby mode to activate secondary consumer features. Standby power must be tested in accordance with the International Electrotechnical Commission (IEC) document "IEC Standard 62301, Ed. 1.0: Household Electrical Appliances – Measurement of Standby Power". To obtain a copy of the standard, visit the IEC "Web Store" at **www.iec.ch**.

Note: In addition to the energy consumed by an air cleaner model while performing its primary function (e.g. air cleaning), EPA is also interested in addressing the energy consumed in standby mode. It is EPA's understanding that some air cleaner models offer secondary functions such as clocks, remote control, and programmable features that continue to consume energy when the air cleaner is not running. To address these models, EPA is proposing a maximum standby power requirement of 2 watts. EPA's intention in including this requirement is to ensure that these models, when qualified as ENERGY STAR, provide the consumer maximum energy savings even when the air cleaning mechanism is not operational. Manufacturers are encouraged to provide feedback and supporting data to EPA regarding this standby power requirement.

This 2-watt maximum requirement is similar to standby power requirements for a number of ENERGY STAR qualified products such as televisions and other consumer electronic products. It is EPA's intention to incorporate standby power requirements in all ENERGY STAR qualified products, where applicable.

In measuring standby power, manufacturers must use the International Electrotechnical Commission (IEC) Standard 62301, Ed 1.0: Household Electrical Appliances – Measurement of Standby Power. IEC is a worldwide organization whose objective is to promote international co-operation concerning standardization in the electrical and electronic fields. Manufacturers are encouraged to provide feedback on the appropriateness of this test standard for measuring standby power in room air cleaners.

4) Testing and Reporting Procedures: Manufacturers are required to perform tests according to the requirements outlined in this specification, and submit self-certification information to EPA on models that they intend to qualify as ENERGY STAR.

   A. In performing these tests, partner agrees to measure CADR according to the latest ANSI/AHAM AC-1 Standard. (Go to www.aham.org for information regarding the latest edition of the ANSI/AHAM AC-1 Standard). Also, during the ANSI/AHAM AC-1 test, a watt meter or equivalent measuring instrument shall be required to quantify the energy consumption of the model. The test protocol for measuring energy consumption of the air cleaner is provided below.

Note: EPA is adopting the AC-1 test procedure to determine the performance of an air cleaner model due to its general acceptance by a large portion of the air cleaner industry and the absence of an acceptable and widely used alternative. While EPA continues to be interested in pursuing the possibility of alternative test methods and measurements of performance, it is not EPA's intention to delay this specification to perform the additional research needed to review, develop, and/or implement a new test procedure. EPA is open to the idea of alternative test procedures for possible inclusion in the specification at a later date. However, such test procedures must come with comparisons among various air cleaner types to be considered by ENERGY STAR.

Energy Consumption Test Protocol

Purpose: This protocol formalizes the process of testing the electrical energy consumption of room air cleaners.

Conditions of Test: The test described in this protocol should be conducted under the following conditions:

Ambient room-temperature:	70° F ± 5°F [21°C ± 1.5°C]
Relative humidity:	40% RH ± 5% RH
Electrical frequency:	60 Hertz ± 1 Hertz
Voltage:	120 volts ± 1 volt

Conditioning of Room Air Cleaner Unit Before Test: Testers should assure that the air cleaner unit's motor is properly broken in by running the unit, without filters, for 48 hours.

Testing Instrumentation: Under this Draft 2 specification, a watt meter, or equivalent instrument capable of measuring true RMS watts with an accuracy of ± 1% at 120 volts, 60 Hertz; calibrated within the last 12 months to a standard traceable to the U.S. National Institute for Standards and Technology (NIST) should be used to measure the total watts consumed.

Note: It was brought to EPA's attention that the ANSI Standard C12.10, referenced in the Draft 1 document, was only applicable to electromechanical watt-hour meters. Laboratories conducting these tests would most likely be using electronic instrumentation to obtain the energy consumption data (watts). Therefore, the definition for ANSI Standard C12.10 has been removed from Section 1 and its reference deleted from the testing instrumentation definition provided above.

Test Procedure: After the unit motor has been properly conditioned, in accordance with equipment manufacturer's instructions, connect the test instrument between the power supply and the air cleaner unit under test and follow steps 1-3, below:

Step 1: Turn the air cleaner ON with all settings/options (i.e., filter check indicator, fan control, etc.) set at maximum level and reset the power-measuring instrument (this will ensure capture of the full cycle power consumption).

Step 2: Adjust the power supply indicator to 120V - 60 Hz.

Step 3: Allow the air cleaner to run for 2 minutes without taking watt readings. After this 2-minute initial runtime, begin recording watt readings at one-minute intervals for 13 minutes. The entire energy consumption test will take 15-minutes total.

Testing notes:
Three of the 13 readings may be thrown out as anomalous to address potential line surges and other variables. The average of the 10 remaining data points constitutes the electrical energy consumption by the unit.

In the instance that energy consumption is measured using a unit other than watts (e.g. watt-hours), convert and record wattage consumed.

Note: It was brought to EPA's attention that during AC-1, energy consumption measurements are recorded at one-minute intervals, for a minimum 15 minutes. In the Draft 1 document, EPA proposed a minimum 20-minute operation with one-minute intervals for measuring watts. This requirement has been modified to be consistent with the test method followed at AC-1 for measuring wattage.

EPA received a few manufacturer requests to set the minimum performance CADR/watt ratio at either low or medium speed because these are the speeds that consumers will most likely operate the air cleaner. The maximum speed setting continues to be a testing requirement under this specification based largely on the fact that CADR values are currently measured and collected at maximum speed under AC-1. Requiring CADR/watt values at multiple speeds would require additional testing on behalf of the manufacturer and place an additional cost burden for qualifying models as ENERGY STAR.

EPA continues to be interested in reviewing information about consumer usage patterns and may consider adding additional speed requirements in future versions of the specification based on stakeholder interest and available performance data.

B. Test results must be reported to EPA using the Room Air Cleaner Qualifying Product Information (QPI) Form.

Note: Under this ENERGY STAR specification, air cleaner manufacturers are expected to test and self-certify models as meeting the minimum performance requirements. Although the submittal of third party laboratory documentation is not required under this specification, manufacturing partners must follow the test procedures provided in this section when testing models for ENERGY STAR consideration. A space on the QPI form will be provided for partners to provide laboratory and test date information. EPA may elect to require third-party documentation in the future if it feels that the integrity of the data is being questioned. In this case, EPA will work with manufacturers to determine how this data should be provided to EPA.

5) Consumer Information: In addition to placing the ENERGY STAR label on the product packaging of ENERGY STAR qualified air cleaners, the following statement must be included on the same panel of the box:

> "Products bearing the ENERGY STAR mark are considered to be the top performers in terms of energy efficiency. EPA does not endorse or support any manufacturer claims regarding indoor air quality or health benefits from the use of this product."

Instruction Manual and Partner Web Site:
In addition to the text provided above, the following statement must be included in the Instruction Manual that is shipped with the qualified model and on the partner's Web site.

> "The performance of this ENERGY STAR qualified model is measured based on a ratio between the model's CADR for Dust and the electrical energy it consumes, or CADR/watts."

The placement of this statement must be in close proximity to the ENERGY STAR mark and any text describing the ENERGY STAR program and/or qualified products.

Note: There is some concern within EPA that by placing the ENERGY STAR label on product packaging, consumers will assume that any claims made by the manufacturer regarding health or improved indoor air quality are endorsed by EPA. The ENERGY STAR mark assures the consumer that they will save energy and money while using the product; it does not, however, guarantee any effects on human health or the indoor environment as a benefit from air cleaning performance. Without an explanation, consumers may associate the ENERGY STAR with health claims being used to market the product by the manufacturer. EPA neither supports nor rejects these claims and is more interested in the consumer's understanding of ENERGY STAR. So that there is no confusion as to what the ENERGY STAR logo represents, disclaimers are now required to be placed on product packaging, product literature, and manufacturer Web sites to make a clear distinction between ENERGY STAR performance and health and/or indoor air quality improvement claims made by the manufacturer. The disclaimers, however, do not need to be placed on the qualifying model itself.

6) Effective Date: The date that manufacturers may begin to qualify products as ENERGY STAR will be defined as the *effective date* of the agreement. The ENERGY STAR Room Air Cleaner specification is effective **March 15, 2004**.

Note: EPA received a request to postpone the January 1, 2004 effective date so that manufacturers would have sufficient time to qualify models and meet product and packaging labeling requirements. Based on the volume of comments received on the Draft 1 version, additional time was also needed for EPA to review, research, and address a number of outstanding issues in the Draft 1 document. As a result, the effective date has been postponed until March 15, 2004. It is EPA's hope that this Draft 2 version now addresses all stakeholder concerns and represents a fair, yet challenging, specification.

EPA's intent is to finalize this air cleaner specification in February and announce the new ENERGY STAR air cleaner program at the International Housewares Show, March 20-22, 2004. **To meet this deadline, EPA must have all comments on this Draft 2 specification by February 13, 2004.** Once the specification is finalized, EPA will work closely with manufacturers to sign onto the program and promote their new partnership and qualifying products at the show. EPA also understands that manufacturers may need some lead time to properly label product packaging and/or literature and will assist partners in implementing these changes into current production runs. EPA expects that these changes may take longer to implement and will allow partners additional time to meet these requirements.

7) Future Specification Revisions: EPA reserves the right to change the specification should technological and/or market changes affect its usefulness to consumers, industry, or the environment. In keeping with current policy, revisions to the specification are arrived at through stakeholder discussions. **In the event of a specification revision, please note that ENERGY STAR qualification is not automatically granted for the life of a product model.** To carry the ENERGY STAR, a product model must meet the ENERGY STAR specification in effect on the model's date of manufacture. The date of manufacture is specific to each unit and is the date on which a unit is considered to be completely assembled.